Netcool/Impact
Version 6.1.1.1

Troubleshooting Guide

IBM

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Edition notice

This edition applies to version 6.1.1.1 of IBM Tivoli Netcool/Impact and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Troubleshooting Guide

The Netcool/Impact *Troubleshooting Guide* provides information about troubleshooting the installation, customization, starting, and maintaining Netcool/Impact.

Intended audience

This guide is for administrators or advanced users wanting to troubleshoot the installation, use, and configuration of Tivoli® Netcool/Impact.

Publications

This section lists publications in the Netcool/Impact library and related documents. The section also describes how to access Tivoli publications online and how to order Tivoli publications.

Netcool/Impact library

- *Quick Start Guide*, CF39PML

  Provides concise information about installing and running Netcool/Impact for the first time.
- *Administration Guide*, SC14755900

  Provides information about installing, running and monitoring the product.
- *User Interface Guide*, SC27485100

  Provides instructions for using the Graphical User Interface (GUI).
- *Policy Reference Guide*, SC14756100

  Contains complete description and reference information for the Impact Policy Language (IPL).
- *DSA Reference Guide*, SC27485200

  Provides information about data source adaptors (DSAs).
- *Operator View Guide*, SC27485300

  Provides information about creating operator views.
- *Solutions Guide*, SC14756000

  Provides end-to-end information about using features of Netcool/Impact.
- *Integrations Guide*, SC27485400

  Contains instructions for integrating Netcool/Impact with other IBM® software and other vendor software.
- *Troubleshooting Guide*, GC27485500

  Provides information about troubleshooting the installation, customization, starting, and maintaining Netcool/Impact.

Accessing terminology online

The IBM Terminology Web site consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology Web site at the following Web address:

http://www.ibm.com/software/globalization/terminology

Accessing publications online

Publications are available from the following locations:

* The *Quick Start* DVD contains the Quick Start Guide. Refer to the readme file on the DVD for instructions on how to access the documentation.
* Tivoli Information Center web site at http://publib.boulder.ibm.com/infocenter/ tivihelp/v8r1/topic/com.ibm.netcoolimpact.doc6.1.1/welcome.html. IBM posts publications for all Tivoli products, as they become available and whenever they are updated to the Tivoli Information Center Web site.

  Note: If you print PDF documents on paper other than letter-sized paper, set the option in the **File → Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

* Tivoli Documentation Central at http://www.ibm.com/tivoli/documentation. You can access publications of the previous and current versions of Netcool/Impact from Tivoli Documentation Central.
* The Netcool/Impact wiki contains additional short documents and additional information and is available at https://www.ibm.com/developerworks/ mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli%20Netcool%20Impact.

Ordering publications

You can order many Tivoli publications online at http:// www.elink.ibmlink.ibm.com/publications/servlet/pbi.wss.

You can also order by telephone by calling one of these numbers:

* In the United States: 800-879-2755
* In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

1. Go to http://www.elink.ibmlink.ibm.com/publications/servlet/pbi.wss.
2. Select your country from the list and click **Go**.
3. Click **About this site** in the main panel to see an information page that includes the telephone number of your local representative.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see Appendix A, "Accessibility," on page 39.

Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site at http://www.ibm.com/software/tivoli/education.

Support for problem solving

If you have a problem with your IBM software, you want to resolve it quickly. This section describes the following options for obtaining support for IBM software products:

- "Obtaining fixes"
- "Receiving weekly support updates"
- "Contacting IBM Software Support" on page viii

Obtaining fixes

A product fix might be available to resolve your problem. To determine which fixes are available for your Tivoli software product, follow these steps:

1. Go to the IBM Software Support Web site at http://www.ibm.com/software/support.
2. Navigate to the **Downloads** page.
3. Follow the instructions to locate the fix you want to download.
4. If there is no **Download** heading for your product, supply a search term, error code, or APAR number in the search field.

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html.

Receiving weekly support updates

To receive weekly e-mail notifications about fixes and other software support news, follow these steps:

1. Go to the IBM Software Support Web site at http://www.ibm.com/software/support.
2. Click the **My IBM** in the toobar. Click **My technical support**.
3. If you have already registered for **My technical support**, sign in and skip to the next step. If you have not registered, click **register now**. Complete the registration form using your e-mail address as your IBM ID and click **Submit**.
4. The **Edit profile** tab is displayed.
5. In the first list under **Products**, select **Software**. In the second list, select a product category (for example, **Systems and Asset Management**). In the third list, select a product sub-category (for example, **Application Performance & Availability** or **Systems Performance**). A list of applicable products is displayed.
6. Select the products for which you want to receive updates.
7. Click **Add products**.
8. After selecting all products that are of interest to you, click **Subscribe to email** on the **Edit profile** tab.
9. In the **Documents** list, select **Software**.
10. Select **Please send these documents by weekly email**.
11. Update your e-mail address as needed.
12. Select the types of documents you want to receive.
13. Click **Update**.

If you experience problems with the **My technical support** feature, you can obtain help in one of the following ways:

Online
> Send an e-mail message to erchelp@u.ibm.com, describing your problem.

By phone
> Call 1-800-IBM-4You (1-800-426-4409).

World Wide Registration Help desk
> For word wide support information check the details in the following link: https://www.ibm.com/account/profile/us?page=reghelpdesk

Contacting IBM Software Support

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, and DB2® and WebSphere® products that run on Windows or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:

  Online
  > Go to the Passport Advantage Web site at http://www-306.ibm.com/ software/howtobuy/passportadvantage/pao_customers.htm .

  By phone
  > For the phone number to call in your country, go to the IBM Worldwide IBM Registration Helpdesk Web site at https://www.ibm.com/account/ profile/us?page=reghelpdesk.

- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request Web site at https://techsupport.services.ibm.com/ssr/ login.

- For customers with IBMLink, CATIA, Linux, OS/390®, iSeries, pSeries, zSeries, and other support agreements, go to the IBM Support Line Web site at http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006.

- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web site at http://www.ibm.com/servers/eserver/techsupport.html.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. From other countries, go to the contacts page of the *IBM Software Support Handbook* on the Web at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html and click the name of your geographic region for phone numbers of people who provide support for your location.

To contact IBM Software support, follow these steps:

1. "Determining the business impact" on page ix
2. "Describing problems and gathering information" on page ix
3. "Submitting problems" on page ix

Determining the business impact

When you report a problem to IBM, you are asked to supply a severity level. Use the following criteria to understand and assess the business impact of the problem that you are reporting:

Severity 1

The problem has a *critical* business impact. You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

Severity 2

The problem has a *significant* business impact. The program is usable, but it is severely limited.

Severity 3

The problem has *some* business impact. The program is usable, but less significant features (not critical to operations) are unavailable.

Severity 4

The problem has *minimal* business impact. The problem causes little impact on operations, or a reasonable circumvention to the problem was implemented.

Describing problems and gathering information

When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

* Which software versions were you running when the problem occurred?
* Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
* Can you re-create the problem? If so, what steps were performed to re-create the problem?
* Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, and so on.
* Are you currently using a workaround for the problem? If so, be prepared to explain the workaround when you report the problem.

Submitting problems

You can submit your problem to IBM Software Support in one of two ways:

Online

Click **Submit and track problems** on the IBM Software Support site at http://www.ibm.com/software/support/probsub.html. Type your information into the appropriate problem submission form.

By phone

For the phone number to call in your country, go to the contacts page of the *IBM Software Support Handbook* at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.

Conventions used in this publication

This publication uses several conventions for special terms and actions, operating system-dependent commands and paths, and margin graphics.

Typeface conventions

This publication uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations:**)
- Keywords and parameters in text

Italic

- Citations (examples: titles of publications, diskettes, and CDs
- Words defined in text (example: a nonswitched line is called a *point-to-point line*)
- Emphasis of words and letters (words as words example: "Use the word *that* to introduce a restrictive clause."; letters as letters example: "The LUN address must start with the letter *L*.")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data.
- Variables and values you must provide: ... where *myname* represents....

`Monospace`

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

Operating system-dependent variables and paths

This publication uses the UNIX convention for specifying environment variables and for directory notation.

When using the Windows command line, replace $*variable* with %*variable*% for environment variables and replace each forward slash (/) with a backslash (\) in directory paths. The names of environment variables are not always the same in the Windows and UNIX environments. For example, %TEMP% in Windows environments is equivalent to $TMPDIR in UNIX environments.

Note: If you are using the bash shell on a Windows system, you can use the UNIX conventions.

Troubleshooting Netcool/Impact

The following troubleshooting tips and techniques apply to issues that can occur when running Netcool/Impact.

Troubleshooting topics are grouped under the following categories:

PolicyLogger issues

This section describes how to resolve common issues relating to the PolicyLogger.

PolicyLogger problem determination

This topic outlines the changes necessary to ensure that PolicyLogger is set for problem determination.

Resolution

To set the PolicyLogger for problem determination:

1. In the GUI, expand **System Configuration** > **Event Automation**, click **Services** to open the **Services** tab.
2. Right click the **PolicyLogger** and click **Edit**.
3. Configur using the following steps:
   - Set the **Highest Log Level** to 3.
   - Under **Log what**, select the following options**All SQL statements**, **Pre-execution Action Module Parameters**, and **All Action Module Parameters**.
   - Under **Service Log**, select the **Write to File** option.
4. Click the **Save** icon to implement the changes.

Policylogger.log not logging data

Unable to use `policylogger.log` file for policy debugging. The `policylogger.log` file is not created in the `$IMPACT_HOME/logs` directory.

Symptom

Log files are not created in the `$IMPACT_HOME/logs` directory.

Cause

The file path is missing or incorrectly set in the `$IMPACT_HOME/etc/<servername>_server.props` file.

Resolution

To fix this issue follow this procedure:

1. Shut down the Tivoli Integrated Portal and the Netcool/Impact servers with the following commands:
2. For example, on UNIX:

   `$IMPACT_HOME/bin/ewasImpactStartStop.sh stop`

   On Windows:

   `ewasImpactStartStop.bat stop`
3. Modify the `impact.logdir` property in the `$IMPACT_HOME/etc/<servername>_server.props` file to point to the correct path.

   For example, the property is `impact.logdir=/tivoli/netcool/impact/logs/`, if you installed Tivoli Netcool/Impact in the `/tivoli/netcool` directory.
4. Start the Tivoli Integrated Portal and the Netcool/Impact servers by running the following commands.
5. For example, on UNIX :

   `$IMPACT_HOME/bin/ewasGUIStartStop.sh. start`

   On Windows:

   `ewasImpactStartStop.bat start`

   Note: If the GUI Server is installed in an existing Tivoli Integrated Portal environment with Tivoli Common Reporting, refer the Common Reporting Information Center at: http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=%2Fcom.ibm.tivoli.tcr.doc_21%2Frtcr_soft_and_hard_reqs.html for information about starting and stopping of the Netcool/Impact server.

Authentication issues

This section describes how to resolve common issues relating to the authentication in Netcool/Impact.

Impact server is unresponsive

The impact server becomes unresponsive resulting from a conflict between the size of the connection pool for the datasource and the maximum number of threads for the EventProcessor.

Symptoms

The impact server becomes unresponsive having run successfully for a number of days. The environment meets the technical requirements for the product and the number of policies running is low.

Cause

This issue can result from a conflict between the size of the connection pool for the datasource and the maximum number of threads for the EventProcessor.

Resolution

Ensure that the size of the connection pool configured for the datasource is greater than the maximum number of processing threads in the EventProcessor.

NCI_import fails if the wasadmin password is not set to the default

Whenever you change the Embedded Websphere Application Server wasadmin password, you must also update the impact.password in the `$IMPACT_HOME/impact/etc/<server_name>_wsadmin.props` file in each Impact Server that you have created.

Symptoms

The nci_import fails.

Resolution

To change the Embedded Websphere Application Server wasadmin password follow this procedure:

1. Open the http://host:adminport/ibm/console URL in any web browser, where hostname is the name of the system where the Embedded Websphere Application Server server is running and port is the HTTP port. The default port is 9080. The console prompts you for login information.
2. Click **Users and Groups**.
3. Click **Manage Users**.
4. Click the tipadmin id.
5. Change and confirm the password.
6. Click **Apply** to save your changes.

To update the Embedded Websphere Application Server wasadmin password in the `$IMPACT_HOME/impact/etc/<server_name>_wsadmin.props` for each Impact Server that you have created follow these steps:

1. Encrypt the password using the $IMPACT_HOME/impact/bin/nci_crypt <password> command. Use the nci_crypt command and the same password as you used in the Embedded Websphere Application Server administration console.
2. Copy the output of the command.
3. Open the `$IMPACT_HOME/impact/etc/<server_name>_wsadmin.props` file and replace the old encrypted password with the new one in this line:

    impact.password=<new_encrypted_value>
4. Restart your Impact Servers using the `$IMPACT_HOME/bin/ewasImpactStartStop.sh`command at the command prompt.

Web Services connection fails with 'Certificate chaining error'

The connection from Web Services to an external system over HTTPS results in a 'Certificate chaining error' error.

Symptom

The following error message is printed in the `SystemOut.log` file:

```
HttpMethodDir I org.apache.commons.httpclient.HttpMethodDirector
executeWithRetry I/O exception (org.apache.axis2.AxisFault) caught when processing request:
com.ibm.jsse2.util.g: PKIX path building failed: java.security.cert.CertPathBuilderException:
PKIXCertPathBuilderImpl could not build a valid CertPath.; internal cause is:
java.security.cert.CertPathValidatorException: The certificate issued by
CN=XXXXXX, OU=CAs, OU=PKI, OU=XXX, O=XXX, C=AU is not trusted; internal cause is:
java.security.cert.CertPathValidatorException: Certificate chaining error
```

Cause

The 'Certificate chaining error' indicates that the intermediate certificate or certificates are not installed on the server. If a certificate is not a self-signed/root certificate it requires that intermediate certificates are installed to link this certificate up to the root certificate authority.

Resolution

You must export the required intermediate certificates from the external system and add them to the application server trust store.

- To export a intermediate certificate in Internet Explorer:
    1. Go to **Tools** > **Internet Options** > **Content** > **Certificates**.
    2. Select the certificate from the list and click **Export** to export it.
    3. Choose the **DER encoded Binary Format** type, and the location where you want to export the certificate.
    4. Click **Save**.
- To export an intermediate certificate in Firefox:
    1. Go to **Tools** > **Options** > **Advanced** > **Encryption** > **View Certificates**.
    2. In the **Certificate Manager** window, click the **Authorities** tab.
    3. Select the certificate from the list and click **Export...** to export it.
    4. Choose the **X.509 Certificate (DER)** type, and the location where you want to export the certificate.
    5. Click **Save**.

You must now import the exported intermediate certificate by following the *"Adding a certificate to the application server trust store"* procedure in the *"Administration Guide"*.

Networking and connectivity issues

This section describes how to resolve common issues relating to networking and connectivity in Netcool/Impact.

Connection error in JRExec server

JRExec server fails to connect and shows the following error:
```
java.net.ConnectException: Connection refused.
```

Symptom

Using the JRExecAction function within a policy is results in an error:

```
'An exception occurred while executing Policy.
Please examine server.log for more details
or check the Policy. The exception was:
Exception in policy: . Exception in policy.
Error while executing external action:
```

```
Could not connect to server: java.rmi.ConnectException:
Connection refused to host: localhost;
nested exception is: java.net.ConnectException:
Connection refused'
```

Resolution

These are typical exceptions that occur when the nci_jrexec is not running. To address this issue, start the JRExec process, by running the following command:

```
$NCHOME/impact/bin/nci_jrexec
```

Compiling nci_compliewsdl causes exception errors

How to resolve `nci_compliewsdl` exception errors.

Symptoms

Compiling the `nci_compliewsdl` script causes exception errors similar to the following examples:

```
Exception in thread "main" java.lang.Exception: Could not find WSDL
compiling output jar file
```

```
nci_compilewsdl: Failed to compile wsdl [Filename.wsdl] (error 1)
```

Resolution

Repeat the process in an environment with internet access to compile the script correctly.

GUI cannot connect to the Impact Server

Use the **Connect** button to reestablish a connection between the Tivoli Integrated Portal GUI and the Impact Server if it fails on initial launch.

Symptoms

When you log in to the Tivoli Integrated Portal GUI and select an item from the subnode, the **Cluster** and **Project** lists display at the top of each tab. If the GUI fails to connect to the Impact Server, a **Connect** button is displayed.

Resolution

Click **Connect** to reconnect to the Impact Server. If the connection is not reestablished, try logging out of the Tivoli Integrated Portal and login again.

Impact server binding to the wrong interface on a multi-networked machine

When you are installing Netcool/Impact on a computer with multiple network interfaces, the Netcool/Impact server might not bind to the same interface as the nameserver.

Symptoms

The Netcool/Impact server becomes inaccessible.

Resolution

There is an additional parameter that you have to use when the server is configured in this way. In the *<server name>*_server.props file, add the following parameter:

impact.server.ipaddress=<ipaddress>

for each interface that you need the server to bind to.

IP Mulitpathing support in Impact

IP Multipathing is used for network card failure. For example, if your using 2 Network Interface Cards, and one fails, the application uses the remaining card.

Resolution

IP Mulitpathing is not supported on Impact.

Internal error on Sybase and the ObjectServer DSA in Impact

The columns of the Sybase database or the ObjectServer database fail resulting in an error message indicating that the columns are "DEAD".

Symptoms

The following messages appear in the impactserver.log file:

```
ERROR [Debug] java.sql.SQLException: JZ006:
 Caught IOException: java.io.IOException:JZ0R3:Column is DEAD.
This is an internal error; please report it to Sybase technical support.
```

Resolution

1. Stop the Impact server
2. Back up and edit the $IMPACT_HOME/etc/ <serverName>_<datasourceName>.ds file.
3. Add the following to the end of the .ds file:
   - For ObjectServer DSAs:

     ```
     <datasourceName>.ObjectServer.NUMDSPROPERTIES=1
     <datasourceName>.ObjectServer.DSPROPERTY.1.NAME=REPEAT_READ
     <datasourceName>.ObjectServer.DSPROPERTY.1.VALUE=true
     ```
   - For the Sybase DSAs:

     ```
     <datasourceName>.Sybase.NUMDSPROPERTIES=1
     <datasourceName>.Sybase.DSPROPERTY.1.NAME=REPEAT_READ
     <datasourceName>.Sybase.DSPROPERTY.1.VALUE=true
     ```

     Replace <datasourceName> with the actual name.
4. Restart the Impact server.

Note: You must manually add these properties to all of your Impact Cluster members, as they will not replicate these new properties to your other cluster members.

Running any of the Subversion commands on AIX 6.1 TL4 causes a core

How to resolve a core when running subversion commands on AIX 6.1 TL4.

Symptoms

If you are using Netcool/Impact on AIX 6.1 Technology Level 4 (TL4), and you run any of the subversion commands, it causes a subversion to core.

Resolution

You need to use AIX 6.1 6100-04 SERVICE PACK 5, this AIX Service Pack fixes the library issue, and resolves the problem.

1. You can download SP5 for TL4 by following the instructions in this link: https://www-304.ibm.com/jct01003c/support/docview.wss?uid=isg1IZ76007
2. To check if the service pack has installed, use the command:
   ```
   oslevel -s
   ```
3. The output is 6100-04-05-1015.

SNMP DSA is not sending traps

The SNMP DSA is not able to send traps because the Management Information Base (MIB) file is corrupted.

Symptoms

You are unable to run a policy to send traps.

Cause

The MIB file corrupted.

Resolution

Check your MIB file with a IReasoning MIB Browser tool before you place the MIB in the $NCHOME/impact/dsa/snmpdsa/mibs directory. This ensures that the MIB is not corrupted.

Test connection database error CTGBA0024E

How to resolve a failed data source connection to the DB2 database running on z/OS.

Symptoms

You may receive the following error when trying to create a data source to access a remote DB2 database running on z/OS.

```
CTGBA0024E The test connection was not opened.
Reason: Could not connect to databases.
```

Cause

The JDBC driver and license .jar files from the source DB2 database may not be accessible by the Impact Server.

Resolution

Copy the db2jcc.jar and db2jcc_license*.jar files from your SQLLIB\java directory where the DB2 database is installed into the IMPACT_HOME/dsalib directory on the Impact Server. Then restart the Impact Server.

Test connection database error on an Informix data source

How to resolve a failed Informix data source connection to an Informix database.

Symptoms

When creating an Informix data source connection to an Informix database, the test connection fails. When you look at the impactserver.log file, the following error message is displayed.

```
Caused by: com.ibm.db2.jcc.am.io: [jcc][10165][10051][3.57.82]
Invalid database URL syntax: jdbc:informix-sqli://
<servername> ERRORCODE=-4461, SQLSTATE=42815
```

Cause

A data source connection to an Informix database fails if a DB2 data source is loaded before it.

Resolution

Restart the Impact Server after creating a data source for an Informix database.

Web services library directory getting corrupted while replicating

The WSDL file created for web services does not replicate properly from the primary to the secondary server.

Symptoms

The jar file created for web services gets corrupted while replicating from the primary to the secondary server.

Resolution

To compile the WSDL, you perform the following tasks:
- Obtain the WSDL file for the Web service.
- Run the WSDL compiler script.
- The jar files are created in the $IMPACT_HOME/wslib directory on the primary server. Copy the jar files from the $IMPACT_HOME/wslib directory to all the secondary servers.
- After compiling the WSDL file either from the wizard or the nci_compile WSDL command, the files need to be copied to all the secondary servers. If an existing package file is recompiled, you need to copy the jar files to all the secondary servers and restart the Netcool/Impact instances.

Note: If the WSDL file contains XSD imports, these files are provided separately. The WSDL files and related XSD files must be placed in a directory with no spaces.

Correcting erratic server communication in a multiple network interface environment

Server communication can be erratic when the server has multiple network interface cards. This situation can disrupt communication between the Impact Server, the Name Server, and the GUI Server or between servers in a server cluster.

About this task

This situation can lead to error messages that state that Netcool/Impact is unable to reach the Name Server. In a clustered environment, the changes that are made to the primary server are not replicated to the secondary server. For example, you edit and save a policy in the primary server. However, the policy is not updated on the secondary server.

To correct the problem:

Procedure

1. Stop the server. In a clustered environment, stop all the servers in the cluster.
2. Add the following property to the *<servername>*`_server.props` file in the `$IMPACT_HOME/etc` directory.

   `impact.server.ipaddress=`*<ipaddress>*

   Where *<ipaddress>* is the IP address that Netcool/Impact uses to connect locally to the Name Server. Ensure that this property does not contain any leading or trailing spaces.
3. Add the following property to the `server.props` file in the `$NCHOME/impact/etc/` directory.

   `impact.server.ipaddress=`*<ipaddress>*

   Ensure that this property does not contain any leading or trailing spaces.
4. Run the `nci_configuration_utility` that is in the `$IMPACT_HOME/install` directory. Choose the **Configure Nameserver** option. Verify that the IP address here is the same as the IP address that is specified in the `impact.server.ipaddress=`*<ipaddress>* property in the `$IMPACT_HOME/etc` directory.

   For a server cluster, you must ensure that all the Name Servers have the correct IP address and order. You must change from using host names to using IP addresses, so you need to remove the old entries and create new entries with the IP address.
5. Ensure the host points to the IP address. In the `serverindex.xml` files in the following directories, for both the GUI server and Impact server, search for `wc_defaulthost` and change `host="*"` to `host="ipaddress"`. In addition to the `wc_defaulthost` entry, you must change all entries from `host="*"` to `host="ipaddress"`, and change all entries from `host="hostname"` to `host="ipaddress"`.

   - `$TIP_HOME/profiles/ImpactProfile/config/cells/ImpactCell/nodes/ImpactNode/` for the Impact Server.
   - `$TIP_HOME/profiles/TIPProfile/config/cells/TIPCell/nodes/TIPNode/` for the GUI Server.

   To ensure that the host points to the IP address, change `host="*"` to `host="ipaddress"` in the `serverindex.xml` file.
6. Remove all the files from the `$IMPACT_HOME/nameserver/nspersist` directory. It is okay if this directory is empty or does not exist.
7. Start the Impact servers.

Installation and upgrade issues

This section describes how to resolve common issues relating to the installation and upgrade of Netcool/Impact components.

Changing the default shared library directory

How to change the default shared library directory.

Symptoms

JDBC drivers or third-party Java archive (JAR) files that you added to shared default library do not work.

Cause

This is a known issue with WebSphere. For example, an instance where the Windows directory `install` has two spaces in the file path, `C:\Documents and Settings\My Impact\impact\dsalib`, the default shared library will not work. This can occur if you choose a path other than preferred file path `impact_install/impact/dsalib` for `dsalib`.

Resolution

eWAS stores the designated shared library information internally in the following file: `INSTALL_HOME/tipv2/profiles/ImpactProfile/config/cells/ImpactCell/nodes/ImpactNode/libraries.xml`.

Once you change the shared library folder, you must check this file to ensure that the last entry at the bottom shows the new directory that has been designated as your new shared library location.

The following examples show how to use a specific directory as the shared library for the Impact server.

Examples

1. Run the `wsadmin` script located in the `NCHOME/tipv2/profiles/ImpactProfile/bin` directory.
2. If your server is running, the syntax is:
   ```
   ./wsadmin.sh -lang jython -f <path to setupSharedLib.py>
   <Node> <Server> <Shared Library Directory> <Impact Server> <Cell>
   ```

   In the following example:
   - `NCHOME` is `/opt/ibm/impact61`.
   - The target shared library is changed from the default `/opt/ibm/impact61/impact/dsalib`
     to `/opt/install/drivers`.
   - The Impact server is `NCI1`. Once you run the following command, you are prompted to enter the user name and password to log in to the wsadmin console.
   ```
   ./wsadmin.sh -lang jython -f /opt/ibm/impact61/impact/install/setupSharedLib.py
   ImpactNode server1 /opt/install/drivers NCI1 ImpactCell
   ```
3. Restart the server after the script has finished.

   If the server is not running, then you must use the `-conntype NONE` flag in the wsadmin command.

   For example:
   ```
   /wsadmin.sh -conntype NONE -lang jython
    -f /opt/ibm/impact61/impact/install/setupSharedLib.py
   ImpactNode server1 /opt/install/drivers NCI1 ImpactCell
   ```

4. For windows environment, the directory names must have a single forward slash.

   For example: `C:\installs\drivers` as the shared library.

5. The following syntax is used when running `wsadmin.bat` located in `NCHOME/tipv2/profiles/ImpactProfile/bin`.

   ```
   wsadmin.bat -lang jython -f C:/impact61/impact/install/setupSharedLib.py
   ImpactNode server1 "C:/installs/drivers" NCI1 ImpactCell
   ```

   - NCHOME is `C:\impact61`
   - The Impact server is `NCI1`
   - The folder containing the JDBC drivers is `C:\installs\drivers`

Exception messages display in the server locale

How to resolve exception messages that display in another language.

Symptom

While configuring a Netcool/Impact data source, data type, or viewing data from a data type, you might receive exception messages from the back end server that show in the locale of the server system.

Resolution

You must run the Impact Profile in the same locale as the browser locale.

Impact not starting on any Security-enhanced Linux (SELinux) system

Impact not starting on any Security-enhanced Linux (SELinux) system.

Symptom

The following messages appear:

```
JVMJ9VM011W Unable to load j9jit23" and "JVMJ9VM011W Unable to load jclscar_23:
cannot restore segment prot after reloc: Permission denied
```

Cause

If any security-enhanced Linux (SELinux) is enabled, you cannot start Impact, as SELinux prohibits loading shared libraries that are not authorized.

Resolution

The way around this issue is to run `setenforce 0` at the command line, as the root user, before starting Impact. You can also permanently disable SELinux by commenting out the `SELINUX=disabled` line in the `/etc/selinux/` config file.

You must restart the system for changes to take effect.

Installation fails if Object Server is used for user authentication

The installation fails with an authentication failure error if you use the Object Server based user registry.

Symptom

If you use the Object Server based user registry the installation fails with the following error in the wsadmin.traceout log:

```
WASX7093I: Issuing message: "WASX7246E: Cannot establish "SOAP"
connection to host "localhost" because of an authentication
failure. Ensure that user and password are correct on the
command line or in a properties file. Exception message (if
any): "ADMN0022E: Access is denied for the getProcessType
operation on Server MBean because of insufficient or empty
credentials.""
```

Cause

One possible cause of this error may be a 'tipadmin' user existing on the Object Server prior to installing Netcool/Impact.

Resolving the problem

You can either remove the 'tipadmin' user from Netcool/ OMNIbus before running the Netcool/Impact installation, or you can use a different user name for your TIP profile than the default 'tipadmin'.

MWM does not work if the default cluster name is not used
Symptom

Maintenance Window Management fails to work properly if the default cluster name, NCICLUSTER, is not used. Upon loading the MWM main page, you see the following message:

```
Could not retrieve a client for accessing the Impact server,
under cluster: clustername
```

Cause

This error is generated by the Operator View code.

Resolution

You must run the **$IMPACT_PROFILE/bin/nc_ant** tool on the GUI Server. Use this command to create the operator view files for the Event Isolation and Correlation and Maintenance Window Management.

```
nc_ant -f installAddOnOpview.xml -DCLUSTERNAME=ClusterName NewCluster
```

Where ClusterName is the cluster name. The NewCluster parameter is a hardcoded parameter and is not meant to be changed.

Unable to install

The installation of Impact cannot complete because of insufficient disk space in the /tmp directory.

Symptoms

Incomplete installation.

Cause

The /tmp directory does not have enough disk space for the installation to complete.

Resolution

1. Delete the InstallAnywhere folder from the $HOME directory of the user installing Impact.
2. Run the installation with the following options:

   ./setupLinux32b30.bin switch -is:tempdir<tempdir>

   For example:

   ./setupLinux64b30.bin -console -is:tempdir /home/pedro

Unable to save data types, data sources or policies in Impact

You are unable to save policies, data sources, data types, services on a new installation of Impact.

Symptom

When connecting to Impact you cannot save policies, data types, or data sources.

Cause

This could result from installing Impact as root user.

Resolution

One of the likely cause is that Impact was installed as the root user. On UNIX platforms, IBM recommends that you do not install Netcool/Impact as the root user. You can run the installer as any other user that has read, write, and execute permissions to the target directory.

Unable to view nameserver status

You cannot view the nameserver status.

Symptoms

Cannot identify what cluster member is currently running or stopped.

Cause

http://servername:9080/nameserver/services does not display what cluster member is running or stopped.

Resolution

To reset, update, or modify the cluster members in this cluster, run:
<installDir>/impact/install/nci_configuration_utility(.bat)

Select the **Configure Name Servers** option. The existing cluster list is used to populate the dialog. You can add, delete, and move members of the list.

Tip: In the GUI, click the **Configuration Documenter** icon, next to the **Cluster** menu, to open the configuration documenter to see the primary server in the selected cluster.

Starting the configuration documenter with the fully qualified domain name

When the configuration documenter starts, the configuration documenter URL uses the IP address that is used by the GUI Server to connect to the Impact Server.

About this task

In some cases, the configuration documenter is unable to connect to the Impact Server because of problems with the IP address used by Netcool/Impact.

Procedure

1. Stop the Impact Server.
2. To enable Netcool/Impact to use the fully qualified domain name instead of the IP address, add the following statement to the `NCI_server.props` file in the `<install_directory>`/impact/etc/ directory:

   `impact.server.iphostname=<Fully_qualified_domain_name>`

   where *<Fully_qualified_domain_name>* is the fully qualified domain name.
3. Save your changes
4. Restart the Impact Server.

Results

When the configuration documenter starts, the URL uses the fully qualified domain to connect to the Impact Server.

Windows Server 2008 R2 Enterprise Edition x86-64 installation fails during Impact Subversion (SVN) step

When you install Netcool/Impact on a Windows 2008 Enterprise R2-64 operating system, the installer fails during the deployment engine Impact_SVN step.

To correct this issue, you must install the following fix packs:
- Microsoft Visual C++ 2008 SP1 Redistributable Package (x86): from http://www.microsoft.com/en-us/download/details.aspx?id=5582.
- Microsoft Visual C++ 2008 SP1 Redistributable Package for (x64) from http://www.microsoft.com/en-us/download/details.aspx?id=2092.

Attention: You must install one of the 2008 versions of Windows Server because other versions are not compatible with the SVN step.

Windows core dump near the end of a fresh installation or upgrade

What to do if you see a core dump error at the end of a fresh installation or upgrade.

Symptoms

The following error appears at the end of the main log file
IMPACT6.1.1.0_install-00.log.

```
2013-03-13 03:48:45.220-12:00 :
 FINE : ** DeploymentPlanProcessor.process(INSTALL) completed with Success.
  (from    com.ibm.ac.coi.ext.ia.COIWrapperPluginImpl.install)
   2013-03-13 03:48:45.220-12:00 :
 FINER : ENTRY (from COIWrapperWorkerThread.disposeSIRuntime)
   2013-03-13 03:48:45.220-12:00 :
 FINER : ENTRY (from DEOperations.disposeSIRuntime)
   2013-03-13 03:48:45.220-12:00 :
 FINER : RETURN (from DEOperations.disposeSIRuntime)
   2013-03-13 03:48:45.220-12:00 :
 FINER : RETURN (from COIWrapperWorkerThread.disposeSIRuntime)
   2013-03-13 03:48:45.220-12:00 :
 FINE : $IAGLOBAL_COI_PLAN_STATUS$=SUCCESS
   (from    com.ibm.ac.coi.ext.ia.plugin.COIProcessPlan.install)
   2013-03-13 03:48:45.220-12:00 :
 FINE : $IAGLOBAL_COI_SUCCESS_MESSAGE$=
  (from    com.ibm.ac.coi.ext.ia.plugin.COIProcessPlan.install)
   2013-03-13 03:48:45.220-12:00 :
 FINER : RETURN (from com.ibm.ac.coi.ext.ia.plugin.COIProcessPlan.install)
   2013-03-13 03:48:45.313-12:00 :
 STDERR : Retrying Installables deferred in pass 0
   2013-03-13 03:48:45.313-12:00 :
 STDERR : Deferral retries done because:
   2013-03-13 03:48:45.313-12:00 :
 STDERR : There were no deferrals in the last pass.
   2013-03-13 03:48:45.688-12:00 :
 FINER : ENTRY (from com.ibm.netcool.wizard.PostReuseTaskAction.install)
```

Cause

The fresh installer (or upgrade installer) got the core dump while zipping up the
installation log files.

Resolution

1. Open command line window and navigate to the TIP profile directory:

   Windows: `C:\program files\IBM\tivoli\tipv2\profiles\TIPProfile\bin`

   UNIX: `/opt/IBM/tivoli/tipv2/profiles/TIPProfile/bin`

2. Run the following command

   Tip: This example uses the default directories for Windows and UNIX:
   command:

   Windows:

   ```
   tipRegister.bat 2290923BCD9A4CD9A7729113306DDF13
   Impact "C:\Program Files\IBM\tivoli\impact" 6.1.1.0 product none false
   ```

   UNIX:

   ```
   tipRegister.sh 2290923BCD9A4CD9A7729113306DDF13
   Impact "/opt/IBM/tivoli/impact" 6.1.1.0 product none false
   ```

The overall fresh installation (or upgrade) completed successfully. You can safely
ignore the core dump.

Character set and encoding issues

This section describes how to resolve common character set and encoding issues.

Oracle database table Special Characters issue

Oracle database table Special Characters prevent Datatype schema discovery

Symptom

Netcool/Impact Oracle DSA Datatype cannot discover the Base Table (schema or table). The Table name is not listed and appears as a series of underscores.

Cause

The Table name contains a Special Character (non-alphanumeric)

Resolution

Netcool/Impact includes a Special Character handling capability:

Data Type configuration for an Oracle data source is broken by tables with $ characters.

The following code is the content of the file named `database_specialchars.props`, which you must place in the `$NCHOME/guiserver/etc` directory if the database tables or schemas contain special characters.

```
## START:
#
# The following 4 special characters are reserved and handled by IMPACT.
#
# If you would like to add another special character to avoid viewing the
# schema problem, please start from 5 and use different replace values.
#
# Adding additional characters will only handle the Data Type Configuration
# view, we don't support any other characters than the first four to get table
# information.

# If there is no special characters in the database schema, specialchar.num can
# be 0.
#
# NOTE: Character $ (dollar sign) is not considered as a special character,
# therefore do not include it in this list.

specialchar.num=0

specialchar.1=%
specialchar.replace.1=__PF__

specialchar.2=#
specialchar.replace.2=__BF__

specialchar.3=*
specialchar.replace.3=__SF__

specialchar.4=-
specialchar.replace.4=__DF__

## END
```

This file does not exist in Netcool/Impact by default and must be created using the User profile used to install and run Impact. You can add to the file by incrementing the index value of each additional special character being mapped or replaced, for example: `specialchar.5=.` `specialchar.replace.5=__FF__` .

The first four examples in the code are those most commonly encountered. The file is disabled by default with `specialchar.num=0`. Edit this number to reflect the actual number of special characters being mapped/replaced, for example: `specialchar.num=5`. Expand the code to include additional characters (for example ".", "!") that are used within the table names and user names of the Oracle database schema.

Note: To read this file into the Impact instance you must restart Impact. Shut down Embedded Websphere Application Server and restart it to ensure that all components are restarted and their configuration files are reread.

Syntax error message for a missing library

How to resolve a syntax error message that indicates a missing library.

Symptoms

A policy file included in the `$IMPACT_HOME/jslib` directory has a syntax error because of a missing curly brace } in a function. The error message reports this issue as a missing library.

Resolution

- If the library is not in the `$IMPACT_HOME/jslib` directory, copy the library to the `$IMPACT_HOME/jslib` directory.
- If the library is in `$IMPACT_HOME/jslib` directory, then check the syntax of the policy file for the missing curly brace } in a function.

Syntax errors in a policy generated by the XinY policy wizard

Syntax errors occur for a policy created using the XinY policy wizard.

Symptom

Create an XinY policy using the XinY policy wizard. Click the **Check Syntax** icon to check the policy syntax. A Syntax Error window opens showing several syntax errors.

Resolution

This is an known issue. Ignore the information in the Syntax Error window. The policy works correctly.

Uploaded policies do not display correctly in the policy editor

How to resolve issues where uploaded policies do not display correctly in the policy editor.

Symptoms

A policy uploaded without an encoding option selected fails to render properly in the policy editor. The policy displays with garbled or incomplete content.

Resolution

Before uploading a policy file, ensure that the file has been encoded as UTF-8 or one of the other encoding options in the following list. When uploading a policy you must select the encoding option from the list menu which matches the encoding of the policy file.

Supported encoding options:
- Unicode (UTF-8)
- Simplified Chinese (GB2312)
- Traditional Chinese (Big5)
- Japanese (EUC-JP)
- Japanese (Shift-JIS)
- Korean (EUC-KR)
- Western (Windows 1252)
- Western European (ISO 8859-1)
- Eastern European (ISO 8859-2)
- Baltic (ISO 8859-4)
- Cyrillic (ISO 8859-5)
- Arabic (ISO 8859-6)
- Greek (ISO 8859-7)
- Hebrew (ISO 8859-8)
- Turkish (ISO 8859-9)

XML Wizard created data types not working on other cluster members

After using the XML Wizard, XML data types, which are created on Impact 5.1.1, are present on the other cluster members.

Symptom

XML data types appear on the other cluster member. However, they do not work with the policies, whenever any of the non-primary cluster members becomes the primary member.

Resolution

After using the XML Wizard to create the XML data types, you must manually update all of the other cluster members in either of the following configuration files:
- $NCHOME/impact/dsa/XmlDsa/XmlHttpTypes
- $NCHOME/impact/dsa/XmlDsa/XmlFileTypes

This can be done by manually copying the XmlHttpTypes and XmlFileTypes configuration files from the primary server (or from the location where the wizard was run) and replacing them with the files in the $NCHOME/impact/dsa/XmlDsa/ directory of the other cluster members.

The data sources and data types are overwritten but the XmlHttpTypes and XmlFileTypes configuration files are not.

Only Policies, Data Sources, Data Types, and Services are replicated between cluster members.

Clustering and synchronization issues

This section describes how to resolve common Clustering and synchronization issues.

Data source replication fails

How to resolve data source replication for **EventRulesDB**, **SCR_DB**, and **EIC_alertsdb** data sources.

Symptom

In a clustered environment, replication of the **EventRulesDB**, **SCR_DB**, and **EIC_alertsdb** data sources fails. The errors appear in the impactserver.log of the primary server.

Cause

Encrypted password cannot be transmitted from the primary server to the secondary server. The installation program does not ask for passwords for the following data sources:
- **EventRulesDB**
- **SCR_DB**
- **EIC_alertsdb**

Resolution

Edit the data sources in the UI and provide a value for the password field. If you are not planning to use these data sources, you can set the password field to be empty or any value and save these data sources.

jslib directory not exported by nci_export

If you have defined a project and wish to export it with the nci_export utility, it does not export the related contents of the jslib directory.

However, the wslib directory is backed up even when the project uses no resources from there.

Cause

The jslib directory is not exported by design in Netcool/Impact 6.1.1.

Resolution

Manually copy the files from the jslib directory to the different servers.

Operator view synchronization in a cluster configuration

Operator view does not display correctly on the secondary sever while open for editing on the primary sever.

An operator view is open for editing on a primary server. The secondary server has been offline and comes back online and completes synchronization. The operator view shows in the secondary server user interface.

Symptoms

If a user selects the operator view and clicks **View** in the secondary server user interface the following error message displays:

```
Error message: impact.opview.display.errmsg.nofile not found in:
ncimsgs.propsNCICLUSTER-myOpview.html
```

Resolution

If you have GUI Servers running in multiple Tivoli Integrated Portal servers for load balancing in high availability mode then you will face this issue.

Copy the `.html` file from `NCHOME/impact/opview/` in the GUI Server to the same directory in the other GUI Servers. If a user selects the operator view and clicks **View** in the secondary server user interface the operator view displays correctly.

In an instance where you have a split installation of the GUI Server and the Impact Server on different machines, you must copy the files from `installhome/impact/opview/displays` and `installhome/impact/opview/assets` to your directory.

Server cluster cannot synchronize if there is a large .type file

A very large .type file is not synchronizing in a clustered environment.

Set the following property in the `$IMPACT_HOME/etc/<SERVER_NAME>_server.props` file:

```
impact.cluster.readlimit=<number>
```

Where *<number>* can be 8192, 16384, 32768 and so on; the default value is 16384 if not specified.

After you add this parameter, or change its value, you should restart the server so that it picks up the configuration change.

Note: Use this parameter only if a large .type file is not synchronizing in a clustered environment.

General Netcool/Impact issues

This section describes how to resolve common Netcool/Impact issues.

How to clear disk space when reporting is enabled

How to check disk space when reporting is enabled. How to set up the report policy **REPORT_PurgeData** with the **PolicyActivator** service to clear large amounts of data in the Apache Derby database.

Symptom

Large amounts of disk space are being consumed when reporting is enabled by enabling one or more of the following options.
- Enabling Collect Reports in the PolicyLogger

- Enabling Collect Reports in one or more instances of the OMNIbusEventReader
- Running the Impact Profile Report which is located under **Reporting** > **Event Automation** > **Impact Profile Report**.

Cause

When the reporting functionality is enabled and Netcool/Impact is processing large volumes of data, the disk usage of the Derby database which is used to store reporting data could grow to a large value.

Resolution

To check the size of the database, search the `$IMPACT_HOME/db/<ServerName>/derby` directory for the `ImpactDB` directory.

To clear the data, you can use the sample policy called **REPORT_PurgeData** in the **Reports** project. You can run the **REPORT_PurgeData** policy to delete old data or to set up your own maintenance solution.

If you decide to use the **REPORT_PurgeData** policy, you can adjust the policy to suit your environment by evaluating the event volume and the amount of reporting. The following parameters in the policy can be adjusted:

- MAX_ROWS: controls the maximum number of rows to be deleted for each table when the policy gets triggered. The default value is 1000. If you decide to increase it to a higher value, check the check the heap usage of the `ImpactProfile`. You can check heap usage in one of the following ways:
  - View the **Server Status** section of the **Configuration Documenter**.
  - In the **Memory Status** feature of the **Self Monitoring** service.
  - Using `wsadmin`, for more information see the *Memory status monitoring* section in the *Self monitoring* section.
- NUM_DAYS: This value determines data which is older than the specified number of days. The default value is 2, so the policy deletes data which is more than two days old for each table.

You can either run this policy manually, or associate this policy with an instance of the **PolicyActivator** service which triggers it at regular intervals. You can adjust the interval based on the event volume and the amount of reporting data collected.

Analyze Event Mapping fails with high CPU use

The CPU can increase drastically when the Analyze Event Mapping tool is used in a service.

Symptom

The CPU usage increases when the Analyze Event Mapping tool is used with reader and listener services.

Cause

The cause can be a combination of the complexity of the filters and also the number of filters that are being used with the service.

Solution

Refer to the following technote for information about the available fixes to resolve this issue. Technote 1627143 Analyze Event Mapping fails with high CPU utilisation.

Collecting log files for debugging

Use the following information to collect policy logs to use to debug issues.

Complete the following steps to collect log files from Netcool/Impact.

1. Execute the `nci_collect_logs` command from the `impact/bin` directory.
2. If you want to exclude the policy and etc files as part of the debug process, execute the command with the following parameter:
   `-DexcludePolicyEtcFiles=true`

For example: `nci_collect_logs -DexcludePolicyEtcFiles=true`

The logs are created as a zip file in the `impact/bin` directory. The filename has the format `impact_logs_<DATEANDTIME>.zip`

If you are submitting any problems to IBM Software Support, it can be useful to submit log file information, or it can be requested by IBM Software Support, see https://www-947.ibm.com/support/entry/myportal/Overview/Software/Tivoli/Tivoli_Netcool~Impact.

Managing the OMNIbusEventReader with an ObjectServer pair for New Events or Inserts

The OMNIbusEventReader service uses the StateChange field by default when querying Netcool®/OMNIbus so that Netcool/Impact can fetch both New and Updated events. To configure the OMNIbusEventReader to receive only new events or inserts, you can clear the **Get updated events** check box in the OMNIbusEventReader configuration pane. Then, the query that is issued to Netcool/OMNIbus uses Serial instead of StateChange.

The limitation with using Serial is that in a Netcool/OMNIbus failover configuration each ObjectServer has its own unique values for Serial. During failover and failback the query that is issued by Netcool/Impact can result in events not being read or the same events being read again. The Serial value used in the OMNIbusEventReader query does not consider the unique value Serial has for each ObjectServer instance.

Scenario

The two ObjectServer instances are NCOMSA and NCOMSB. For NCOMSA, the current Serial is 9000. For NCOMSB, the current Serial is 7000.

When Netcool/Impact is connected to NCOMSA, the query is:

```
select top 1000 * from alerts.status where Class != 10500 AND Serial >
9000 order by Serial;
```

NCOMSA goes down and Netcool/Impact connects to the secondary ObjectServer which is NCOMSB.

When connected, Netcool/Impact issues a select statement:

```
select top 1000 * from alerts.status where Class != 10500 AND Serial >
9000 order by Serial;
```

NCOMSB has Serial 7000 and any new events that are inserted into NCOMSB
would have Serial values as 7001, 7002, and so on. However, Netcool/Impact does
not maintain a Serial value per ObjectServer instance and continues to look for
events that are based on its last internal check pointed value, which was 9000.

As a result Netcool/Impact does not pick up the new events 7000, 7002, 7003, and
so on. It would miss reading 2000 events from 7000 to 9000.

Once the inserted event gets a Serial value of 9001, Netcool/Impact starts fetching
those events.

Configuring the OMNIbusEventReader with an ObjectServer pair for New Events or Inserts

About this task

To configure an OMNIbuseventReader to work in an ObjectServer failover or
failback configuration, you must add properties to the `eventreader.props` file.
Adding properties to the `eventreader.props` file overrides selecting or clearing the
Get Updates Events check box in the UI.

Procedure

1. Identify the OMNIbusEventReader that is to query the Netcool/OMNIbus
   failover/failback pair. A new Netcool/Impact installation provides a reader that
   is called OMNIbusEventReader but you can create more instances in the
   Services UI.
2. Stop the Impact Server. In a Netcool/Impact clustered environment, stop all the
   servers.
3. Go to your `IMPACT_HOME/etc` directory and look for the `.props` file that
   corresponds to your OMNIbusEventReader. The file is in the following format:

   `<servername>_<readernameinlowercase>.props`

   where `<servername>` is the name of your Impact Server instance.

   For example, If your Netcool/OMNIbus server instance is **NCI1** and your reader
   is **OMNIbusEventReader**, the file would be `NCI1_omnibuseventreader.props`
4. Edit the `.props` file and add the following lines:

   ```
   impact.<readernameinlowercase>.objectserver.queryfornewevents=true
   impact.<readernameinlowercase>.objectserver.updatefornewevents=true
   ```

   For example:

   ```
   impact.omnibuseventreader.objectserver.queryfornewevents=true
   impact.omnibuseventreader.objectserver.updatefornewevents=true
   ```
5. Copy the sql file `nci_omnibus_update.sql` in the `IMPACT_HOME/install/dbcore/`
   `OMNIbus` folder to the machines where the primary and secondary instances of
   the ObjectServer are running. This script adds the Integer field `ImpactFlag` to
   the `alerts.status` schema. Run this script against both the primary and
   secondary ObjectServer pairs.
   * For UNIX based platforms, you can run the SQL script:

     ```
     cat <path to nci_omnibus_update.sql> | ./nco_sql -server '<servername>
     -user '<username>' -password '<password>'
     ```

For example, if the `nci_omnibus_update.sql` is placed in the `/opt/scripts` folder and I want to run this script against the ObjectServer instance **NCOMS**, connecting as the root user with no password, the script can be run as:

```
cat /opt/scripts/nci_omnibus_update.sql | ./nco_sql -server 'NCOMS'
-user 'root' -password ""
```

- For Windows platforms, you can run the SQL script as:

```
type <path to nci_omnibus_update.sql> | isql.bat -S <servername>
-U <username> -P <password>
```

For example, place the `nci_omnibus_update.sql` file in the `OMNIHOME/bin` folder and run this script against ObjectServer instance **NCOMS**, connecting as root with no password:

```
type nci_omnibus_update.sql | isql.bat -S NCOMS -U root -P
```

Make sure that `-P` is the last option. You can ignore providing the password and enter it when prompted instead. For information aboutNetcool/OMNIbus, see the *IBM Tivoli Netcool/OMNIbus Administration Guide* available from the following website:

http://www.ibm.com/tivoli/documentation.

6. When the script is completed, an Integer field `ImpactFlag` is added to the `alerts.status` schema. Check that the integer field called `ImpactFlag` is added for each ObjectServer instance primary and secondary.

Important: The `ImpactFlag` must be included in the omnibus bidirectional gateway mapping file.

7. Start your Netcool/Impact server and the OMNIbusEventReader. In a clustered setup, start the primary server first followed by all the secondary servers.

8. You can check the OMNIbusEventReader logs and verify that the query now has `ImpactFlag = 0` as a condition. Once Netcool/Impact finishes processing events, which match the `ImpactFlag = 0` criteria, it automatically updates the `alerts.status` table so that `ImpactFlag` gets set to 1. This prevents the OMNIbusEventReader from reading the same events again and Netcool/Impact reads and processes only new events and inserts that it has not read before.

Additional customization using the ReturnEvent function to update one or more fields in Netcool/OMNIbus

If your policy is already using the ReturnEvent function to update one or more fields in Netcool/OMNIbus, you can add the `ImpactFlag` field in the update statement to avoid Netcool/Impact internally issuing an update to set the `ImpactFlag`.

Procedure

1. For the policy to handle the ImpactFlag field, check that `@ImpactFlag = 1;` is added before the ReturnEvent gets issued.

```
@ImpactFlag = 1;
ReturnEvent(EventContainer);
```

2. To remove the issued update, especially by Netcool/Impact: Either, set: `impact.<readernameinlowercase>.objectserver.updatefornewevents=false` or do not add the `impact.<readernameinlowercase>.objectserver.updatefornewevents=false` property to the `.props` file of the reader since default value is false.

Remember: Changing values in the `.props` file is done only when the server is shut down. If you are running a cluster, make sure all the servers are down. Change the `.props` of the primary server only and it replicates to the secondary servers when they are started.

Additional customization using a field other than ImpactFlag

If you cannot use the ImpactFlag field for the setup because a field called ImpactFlag already exists, you can customize the field using the following procedure.

Procedure

1. Customize the field Netcool/Impact uses by adding the following additional properties:

   ```
   impact.<readernameinlowercase>.objectserver.queryforneweventsexpr=<select expression>
   impact.<readernameinlowercase>.objectserver.updateforneweventsexpr=<update expression>
   ```

   For example, your reader name is OMNIbusEventReader and you want to use a Integer field called `Impacted` for this reader instead of `ImpactFlag`, the properties become:

   ```
   impact.omnibuseventreader.objectserver.queryfornewevents=true
   impact.omnibuseventreader.objectserver.updatefornewevents=true
   impact.omnibuseventreader.objectserver.queryforneweventsexpr=Impacted = 0
   impact.omnibuseventreader.objectserver.updateforneweventsexpr=Impacted = 1
   ```

2. Make sure that the field `Impacted` in this example exists in both the primary and backup Netcool/OMNIbus instances configured for the data source. You can edit the **nci_omnibus_update.sql** script and change `ImpactFlag` to `Impacted`.

3. Then run the script against Netcool/OMNIbus using steps 5 and 6 on page 24 in Configuring the OMNIbusEventReader with an ObjectServer pair for New Events or Inserts.

Handling Serial rollover

How to set up Serial rollover with Netcool/Impact.

Symptoms

If you are not using the **Get Updates** option in the OMNIbus reader service, Netcool/Impact uses the Serial field to query Netcool/OMNIbus. Serial is an auto increment field in Netcool/OMNIbus and has a maximum limit before it rolls over and resets.

Resolution

Complete the following steps to set up Netcool/Impact to handle Serial rollover:

1. Identify the OMNIbusEventReader that queries the Netcool/OMNIbus failover/failback pair. A Netcool/Impact installation provides a reader called OMNIbusEventReader but you can create more instances in the Services GUI.

2. Stop the Impact Server. In a Netcool/Impact clustered environment, stop all the servers.

3. Copy the sql file **serialrotation.sql** in the `IMPACT_HOME/install/dbcore/OMNIbus` folder to the machines where the primary and secondary instances of the ObjectServer are running. This script creates a table called **serialtrack** in the alerts database and also creates a trigger called **newSerial** to default_triggers.

4. Run this script against both the primary and secondary ObjectServer pairs.

- For UNIX based operating systems:

```
cat <path_to_serialrotation.sql> | ./nco_sql -server '<servername>
 -user '<username>' -password '<password>'
```

For example, if the **serialrotation.sql** is placed in the /opt/scripts folder and I want to run this script against the ObjectServer instance NCOMS, connecting as the root user with no password, the script can be run as:

```
cat /opt/scripts/serialrotation.sql | ./nco_sql -server 'NCOMS'
 -user 'root' -password ""
```

- For Windows operating systems:

```
type <path to serialrotation.sql> | isql.bat -S <servername>
 -U <username> -P <password>
```

For example, place the **serialrotation.sql** file in the OMNIHOME/bin folder and run this script against the ObjectServer instance NCOMS, connecting as a root user with no password:

```
type serialrotation.sql | isql.bat -S NCOMS -U root -P
```

Make sure that -P is the last option. You can ignore providing the password and enter it when prompted instead. For information about Netcool/OMNIbus, see the IBM Tivoli Netcool/OMNIbus *Administration Guide* available from the following website: https://www.ibm.com/developerworks/wikis/display/tivolidoccentral/OMNIbus.

Further steps

When the script completes, make sure that you enable the **newSerial** trigger.

1. Start your Netcool/Impactserver and the OMNIbusEventReader. In a clustered setup, start the primary server first followed by all the secondary servers.
2. Log in to the Netcool/Impact GUI and create an instance of the DefaultPolicyActivator service. In the Configuration, select the policy to trigger as SerialRollover and provide an interval at which that policy gets triggered.
3. The SerialRollover policy assumes that the data source used to access Netcool/OMNIbus is the **defaultobjectserver** and the event reader that accesses Netcool/OMNIbus is the OMNIbusEventReader. If you are using a different data source or event reader, you must update the *DataSource_Name* and *Reader_Name* variables in the policy accordingly.
4. Start the instance of the DefaultPolicyActivator service that you created.

JMS messages fail to get sent

JMS messages fail to get sent because there are too many pending JMS connections in the queue.

Symptoms

If a JMS message fails to get sent, for example, due to the JMS provider being unreachable, the JMS Connection call joins a queue of pending connections. Once the pending connections limit is reached (5 by default), any new calls to establish a connection to the JMS provider will not be made for the next 10 minutes (configurable). If this happens, you can see the following exception in the log:

```
Caused by: com.micromuse.common.datasource.JMSDataSourceException:
Too many pending JMS Connections, cannot proceed.
```

After that, an attempt is made to establish a connection to the JMS Provider, every 10 minutes. If it is successful, all the pending connections are cleared, and Netcool/Impact continues. Otherwise, it keeps attempting to establish a

connection, once every 10 minutes. These failed pending calls get stored in the pending queue.

Resolution

You can clear the pending queue in one of the following ways:

- If you are using the JMS Listener service to send messages, you can clear the queue by running the following command in the CLI:

  `update Service set ClearPendingCalls=true where Name='JMSMessageListener';`

- Restarting the JMS Listener service will also clear the pending calls queue. If you are triggering the SendJMSMessage, or ReceiveJMSMessage function, add this line to your policy:

  `ClearPendingCalls=true`

Further steps

By default, the maximum number of pending JMS connections is 5, but you can configure it by adding the following property to the `.ds` file of the JMS data source:

`<dsname>.JMS.MAXPENDINGCALLS=<new_limit>`

After the maximum limit of pending calls is reached, attempts are made at 10 minutes intervals. To configure this interval add the following property in the `<servername>_server.props`:

`impact.jms.pending.duration=<new_time_in_miliseconds>`

LDAP configuration changes in the Tivoli Integrated Portal not reflected in the Impact profile

With LDAP as my user registry, I created new LDAP users in the administrative console in Tivoli Integrated Portal but I cannot see them in the Impact profile.

Cause

LDAP configuration changes do not automatically propagate from the TIP profile to the Impact profile, if the same LDAP repository is not configured as the default for the TIP profile, and the Impact profile.

Resolution

Check that LDAP is configured for both TIP and Impact as the default user repository. If not, login to the Integrated Solutions Console (ISC) to configure LDAP. The URL is *https://hostname:port/ibm/console/logon.jsp* where *< port>* is the value of the **WC_adminhost_secure** property in $TIP_HOME/profiles/ImpactProfile/properties/portdef.props and $TIP_HOME/profiles/TIPProfile/properties/portdef.props files. Those values by default are:

- *16316* for TIP
- *9086* for Impact

See the *Administration Guide* for further information about LDAP configuration.

Policy editor icons not displayed correctly

When editing a policy in the policy editor, one or more icons are missing from the policy editor toolbar.

This occurs in Internet Explorer 8 when the "Active Scripting" option is disabled for the Internet Zone. The policy editor requires active scripting to be enabled for the Internet Zone.

Resolution

Enable active scripting for the Internet Zone by following these steps:

1. From the Internet Explorer main menu, select the **Tools** > **Internet Options** > **Security** tab.
2. Select **Internet zone** and click **Custom Level**.
3. Scroll down to the **Scripting** section and underneath **Active scripting** set it to **Enabled**.
4. Click **OK** to save the changes.

Removing hyperlinked text when editing policies in Internet Explorer

How to resolve hyperlinked text when editing policies in Internet Explorer.

Symptom

URLs and email addresses that you enter in the Policy Editor as plain text are automatically converted into hyperlinks. If the URL or email address is surrounded by double quotation marks, the browser removes the double quotation marks.

Cause

Internet Explorer automatically detects and converts plain text URLs inside content editable areas of a HTML page, such as the text area in the Policy Editor. The automatic hyperlinking is a built-in feature of Internet Explorer (version 5.5 and later) and is not configurable.

Resolution

The hyperlink is non consequential to Netcool/Impact. The Policy Editor will convert the policy content to plain text when the policy is saved to the Impact Server. You can either re-enter double quotation marks after the URL is converted to a hyperlink. Or you can copy and paste the URL with double quotation marks intact into the editor.

System cannot handle a large SNMP table

The system cannot handle an SNMP table that has more than 1000 rows.

By default Netcool/Impact can handle SNMP tables with up to 1000 rows. If you have an SNMP table with more than 1000 rows the system will only be able to access the first 1000 rows.

To remedy this, set the following property in the $IMPACT_HOME/etc/ <SERVER_NAME>_server.props file:

`impact.snmp.table.maxnumrows=<number>`

Where *<number>* is greater than or equal to 1; The default value is 1000 if not specified.

After you add this parameter, or change its value, you should restart the server so that it picks up the configuration change.

Note: Use this parameter only if you have an SNMP table with more than 1000 rows.

Unable to modify SNMPv3 settings for SNMPDirectMediator data source

When creating an SNMPDirectMediator data source, the SNMPv3 settings are permanently disabled even though the SNMP version field is set to "3".

This occurs in Internet Explorer 8 when the "Active Scripting" option is disabled for the Internet Zone. To enable the SNMPv3 settings, active scripting must be enabled for the Internet Zone.

Resolution

Enable active scripting for the Internet Zone by following these steps:

1. From the Internet Explorer main menu, select the **Tools** > **Internet Options** > **Security** tab.
2. Select **Internet zone** and click **Custom Level**.
3. Scroll down to the **Scripting** section and underneath **Active scripting** set it to **Enabled**.
4. Click **OK** to save the changes.

Using special characters in column names output by the `DirectSQL` function

Column names that are output by the `DirectSQL` function might contain special characters. This issue can create a problem for the SQL queries that are used by Netcool/Impact.

Procedure

If you use the `DirectSQL` function in a policy to retrieve column names that contain special characters, add a statement to the policy that changes the column name to a value that does not contain any special characters.

Example

For example, add the following query to a policy that contains the `DirectSQL` function:

```
DataSource = "MYSQL_01";
Query = "select ID, SPECIAL^CASE as SPECIALCASE from table";
CountOnly = False;
DataItems = DirectSQL(DataSource, Query, CountOnly);
```

The query replaces the special characters with the new value.

Version control system displays a Working copy <directory name> locked error message

How to resolve a `Working copy <directory name> locked` error message and unlock the locked directory.

Problem

An error message similar to this one is displayed:

```
Working copy ,<directory name> locked
svn: run 'svn cleanup' to remove locks (type 'svn help cleanup' for details)
```

Resolution

The solution is to run the **svn cleanup <PATH>** command to unlock the directory that is locked.

1. Go to your IMPACT_HOME/platform/<os name>/svn/bin folder.

   For example:

   ```
   /opt/ibm/impact/platform/linux/svn/bin folder
   ```

2. Run the following command: **svn cleanup <Repository location>**

   Where <Repository location> is the directory that is locked.

   For example, if your IMPACT_HOME/etc folder is locked, the command is:

   ```
   svn cleanup /opt/ibm/impact/etc
   ```

When the command is complete, the lock is removed from the directory.

If you receive this type of error message for other directories, for example IMPACT_HOME/policy you can run the same command.

svn cleanup <Repository location> becomes

```
svn cleanup /opt/ibm/impact/policy
```

Data items view cannot display all the data items

The data items view does not display all the data items correctly.

This issue can occur if the data items view uses a table row that contains a large number of cells. This issue occurs because Netcool/Impact cannot render all the entries properly in HTML.

Netcool/Impact uses a Java API to create the HTML that displays the data items in the data items view. This API uses a hashcode to store child elements and the order of these elements. The API assigns a unique code to each hashcode that is stored in the hashtable. However, in some cases, this unique code can be duplicated. When this occurs, Netcool/Impact cannot display the entries in HTML.

For example, if you use a data view to display a row from a database table with more than 100 cells, the Java API duplicates some of the unique codes that are used to identify the hashcodes in the hashtable. As a result, some of the entries in the registry are overwritten. The data items view does not display all the cells from the table row.

While you cannot prevent this issue, it occurs on the UI only. It does not affect the underlying data.

Backing up Netcool/Impact on a Network File System (NFS) drive

You can manually back up Netcool/Impact on a Network File System (NFS) drive.

Procedure

1. Stop the Impact Server.
2. Create a directory that is called IMPACT_BACKUP on the NFS drive. For example, /<nfs_drive>/IMPACT611_BACKUP.
3. Back up the deployment engine (DE).
   a. Open the user home directory.
   b. Go to the .asci_<host_name>/bin directory.
   c. Use the following command to back up the DE:

      `./de_backupdb -bfile  /<nfs_drive>/<BACKUP_DIRECTORY_NFS>/IMPACT_DE.backup`

      For example:

      `./de_backupdb -bfile  /nfs_drive/IMPACT611_BACKUP/IMPACT_DE.backup`
4. Copy the installation directory, that is the directory where you installed Netcool/Impact, to the backup directory on the NFS drive. For example, copy the /opt/IBM/tivoli directory to /nfs_drive/IMPACT61_BACKUP.

What to do next

After you back up Netcool/Impact, you may want to run the installer without running the back up. To run the installer without running the back up, go to the installation image directory, that is the source directory where you installed Netcool/Impact from, and run the appropriate command for your operating system.

- For Windows operating systems, use the following command:

  `setup-windows.exe -DNO_BACKUP=true`
- For Linux operating systems, use the following command:

  `./setup-linux.bin -DNO_BACKUP=true`

Backing up TBSM on a Network File System (NFS) drive

You can manually back up Tivoli Business Service Manager (TBSM) on a Network File System (NFS) drive.

Procedure

1. Stop the TBSM Server.
2. Create a directory that is called TBSM61_BACKUP on the NFS drive. For example, /<nfs_drive>/TBSM_BACKUP.
3. Back up the deployment engine (DE).
   a. Open the user home directory.
   b. Go to the .asci_<host_name>/bin directory.
   c. Use the following command to back up the DE:

      `./de_backupdb -bfile  /<nfs_drive>/<BACKUP_DIRECTORY_NFS>/IMPACT_DE.backup`

      For example:

      `./de_backupdb -bfile  /nfs_drive/TBSM61_BACKUP/IMPACT_DE.backup`
4. Copy the installation directory, that is the directory where you installed TBSM, to the backup directory on the NFS drive. For example, copy the /opt/IBM/tivoli directory to /nfs_drive/TBSM61_BACKUP.

What to do next

After you back up TBSM, you may want to run the installer without running the back up. To run the installer without running the back up, go to the installation image directory, that is the source directory where you installed TBSM from, and run the appropriate command for your operating system.

- For Windows operating systems, use the following command:
  ```
  setup-windows.exe -DNO_BACKUP=true
  ```
- For Linux operating systems, use the following command:
  ```
  ./setup-linux.bin -DNO_BACKUP=true
  ```

Using special characters in column names

In certain specific circumstances, special characters in column names can create a problem for Netcool/Impact. To correct this problem, you add the special character to the list of allowed special characters.

About this task

Using special characters in column names can create a problem for the SQL queries that are used by Netcool/Impact. Netcool/Impact, in most cases, surrounds the column that contains the special characters with double quotation marks to avoid this issue. However, if the particular character is not listed in the `impact.server.columns.reservedchars` property in the `NCI_server.props` configuration file, you must add it.

Procedure

1. To allow the handling of a special character in a column name, add the following statement to the `NCI_server.props` configuration file:
   ```
   impact.server.columns.reservedchars=<specialcharacters>
   ```

   where *<specialcharacters>* are the characters that you want to add. For example, you can add `"[]=&@,$%*<>,-:;?!ß£~§µ+#./\\'(){}^` here.
2. Restart the Impact Server.

Example

The following example demonstrates how to add a list of special characters:
```
impact.server.columns.reservedchars = "[]=&@,$%*<>,-:;?!ß£~§µ+#./\\'(){}^
```

Removing disassociated files that result from XinY policy

If you use the XinY wizard to create an XinY policy and associated data items, an accumulation of disassociated system files can occur. These files can negatively impact the processing performance of the Impact Server.

About this task

During failover and failback, an error can occur that causes a mismatch between the data items and the file system records. Certain files can become disassociated from the data items because of this mismatch. Netcool/Impact saves these files in the $NCHOME/impact/db/*<ImpactServerName>*/71 directory where *<ImpactServerName>* is the name of the Impact Server.

The buildup of these files can reduce the performance of the Impact Server.

To check for a build up of files in your installation, use the following command to check the files in the $NCHOME/impact/db/*<ImpactServerName>*/71 directory:

```
ls -l $NCHOME/impact/db/[ImpactServerName]/71 | wc -l ls -l $NCHOME/impact/
db/<ImpactServerName>/71 | wc -l
```

Procedure

1. To solve the issue, use the sample policy called XINY_DataType_PurgeData in the **Reports** project. You can run the XINY_DataType_PurgeData policy to delete old data or to set up your own maintenance solution. If you decide to use the XINY_DataType_PurgeData, you can adjust the policy to suit your installation. The following parameters in the policy can be adjusted:

   ```
   InternalDataTypeList : This is an array of internal data types.
   The data types will be relevant to your installation.
   NumDays:  Remove everything older than this number of days.
   ```

2. You can either run this policy manually, or associate this policy with an instance of the **PolicyActivator** service, which triggers the policy at regular intervals. You can adjust the interval based on the event volume and the amount of reporting data that is collected.

What to do next

These files accumulate again over time. To prevent a buildup of these files, you must repeat this procedure.

Tivoli Integrated Portal cannot display output parameter from a JavaScript policy

If you use an output parameter from a JavaScript policy to send data from a UI data provider to the Tivoli Integrated Portal UI on the frontend server, the JavaScript variables are not displayed.

If you invoke Java™ calls or use functions inside the JavaScript, the UI data provider cannot return the output parameter.

To solve this issue, you must include a statement in the JavaScript policy that deletes the variables before the policy is run. For example:

```
var test = [ "alpha", "beta", "delta", "gamma" ];
function getWSJarList(location) {
//....
}
dir = java.io.File("C:\\Temp\\test.txt");
Log(test);
delete dir;
delete getWSJarList;
```

You must include the delete *<variable>* for all the Java objects and function names inside the JavaScript policy at the end of the policy.

Troubleshooting OSLC and the UI data provider

Consult these troubleshooting notes to solve issues with the implementation of OSLC and UI data provider in Netcool/Impact.

Modifying the character encoding for OSLC

You can change the default character encoding for OSLC if your specific circumstances require it.

About this task

The default character encoding value for OSLC is UTF-8. You only need to change this in very specific circumstances.

Procedure

To change the character encoding, change the following statement in the `NCI_oslc.props` file:

```
impact.oslc.encoding=<Value>
```

where *<Value>* is the value that you want to use for character encoding. The default value is UTF-8.

Using special characters in OSLC and UI data provider policies

You cannot use special characters like the comma (,) and ampersand (&) characters in policies that provide data to the OSLC provider or the UI data provider because these characters are reserved.

Special characters like the comma and ampersand characters are reserved as special characters. You cannot use these characters in policies that provide data to the OSLC provider or the UI data provider. To display a different field name, use the `AS` keyword to replace the reserved characters.

Example

Use this example to query the table `TEST_TABLE` that has a field with the special character `My&Test` using the DirectSQL function:

```
SQLQuery = "SELECT My&Test AS My_Test FROM TEST_TABLE";
Nodes=DirectSQL(DataSourceName,SQLQuery,null);
```

The query returns the `My&Test` result into `My_Test`, to retrieve the field data.

```
Log(Nodes[index].My_Test);
```

Troubleshooting the Tivoli Integrated Portal

Consult these troubleshooting notes to help determine the cause of issues that relate to Tivoli Integrated Portal and to determine the correct course of action.

Login errors

Anything from an unassigned user role to a loss of connectivity with the user repository can cause a login error. Read the TIPProfile logs for help in diagnosing the cause.

Harmless authentication messages

Certain sign-on messages are routine and might not indicate that a problem has occurred.

For installations that have been configured to use the Tivoli Integrated Portal authentication service, it is possible that an authentication client receives CTGES1504E and CTGES1505E messages. These messages are generated when an unused single sign-on LTPA token is discarded, and might be insignificant.

An authentication client attempts to use all single sign-on tokens provided to it when authenticating to an authentication service. Some of these tokens might not apply to the configured authentication service, causing CTGES1504E and CTGES1505E messages to be generated on the client and CTGES1089E on the server. When not accompanied by other CTGES0008E authentication client errors, these messages indicate only that a particular single sign-on token was discarded.

Already logged in

Read this topic if you closed your work session and then tried to log in again, but received a message that the user ID was already logged in.

If you are logged in to the portal and close the browser window, you might not be logged out. Because you closed the browser, though, you need to log in again to start another work session. If, while logging in, you get a message that the user ID is already logged in and do you want to log out the other user, accept the request.

No user role assigned

Users should have the minimum required product level roles assigned or they might not see the contents of their default product pages after logging in.

Slow network response

Performance issues can cause an unresponsive script message to display after login.

If, immediately after logging in, you get a message about an unresponsive script and you are asked whether to continue or cancel opening the Web page, click **Continue**. After a short time, the welcome page for the console is displayed.

Such messages can indicate a slow network link between your computer and the application server. Ping the server computer to see the round trip response time. Use response times of 40 ms or better.

Try using a remote desktop connection to a computer that has a better response time with the application server and logging in from there.

Consider using a caching HTTP proxy to improve speed and reduce network traffic.

System in maintenance mode

A message about the system in maintenance mode in a load balancing configuration can indicate that the servers have not had trust enabled between them.

If you get a message in the portal, "The system is in maintenance mode. Please contact your administrator and try again later", it most likely means that the procedure for enabling trust between load balancing servers has not been completed.

Viewing TIPProfile logs for login errors

In the event of a login error, review the system outage and system error logs to help determine the cause.

About this task

Follow these steps to open the system outage and system error logs:

Procedure

1. At the command line, change to the *tip_home_dir*/profiles/TIPProfile/logs/ server1 directory.

2. Open SystemOut.log and SystemErr.log in a text editor. On Windows, for example, the command notepad systemout.log opens the log in Windows Notepad.

3. Review the errors.

4. If the cause and solution to your login error is not apparent, send the SystemOut.log and SystemErr.log from this directory and the server1_exception.log (and any other files that were modified within a few minutes of this one) from the sibling ffdc directory to your security administrator for further examination.

Editing a properties file

Properties files describe the environment and their settings are usually predefined or added during installation. You do not need to change these files unless instructed by IBM Software Support.

About this task

The properties files are on the computer where the Tivoli Integrated Portal Server is installed.

Procedure

1. Locate the *tip_home_dir*/properties directory, where *tip_home_dir* represents the installation path for the application server. For example, C:\IBM\tivoli\tipv2 is the default installation path on Windows; /opt/IBM/tivoli/tipv2/ is the default installation path on Linux or UNIX.

2. Open the desired properties file in a text editor.

3. Edit the file as needed, and then save and close it.

4. Stop the application server, and then restart it.

Setting a trace

Enable a trace of the Tivoli Integrated Portal Server when you want to keep a record of activity.

Before you begin

The portal has a Troubleshooting Logs and Trace option for enabling a trace.

About this task

Follow these steps to set a trace that will record the Tivoli Integrated Portal Server actions in a log file: *tip_home_dir*/profiles/TIPProfile/logs/server1/trace.log.

Procedure

1. Log in to the *Tivoli Integrated Portal*.

2. In the navigation pane, click **Settings** > **Websphere Admin Console** and click **Launch Websphere Admin Console**.

3. In the WebSphere Application Server administrative console, select **Troubleshooting** > **Logs and traces**.

4. Select the Tivoli Integrated Portal Server name (such as `server1`) in the Logging and Tracing portlet.

5. In the **Configuration** tab, click **Change Log Detail Levels**.

6. In the **Groups** list, expand **com.ibm.tivoli.*** and click **com.ibm.tivoli.tip.***.

7. Select a log level (such as **All Messages and Traces**) and click **OK** or **Apply**.

8. When prompted to save the configuration, click **Save**.

9. Stop and restart the Tivoli Integrated Portal Server:

   a. In the *tip_home_dir*/profiles/TIPProfile/bin directory, depending on your operating system, enter one of the following commands:

      - `stopServer.bat server1`
      - `stopServer.sh server1`

      Note: On UNIX and Linux systems, you are prompted to provide an administrator username and password.

   b. In the *tip_home_dir*/profiles/TIPProfile/bin directory, depending on your operating system, enter one of the following commands:

      - `startServer.bat server1`
      - `startServer.sh server1`

Results

After the server has been stopped and restarted, trace entries are saved to the *tip_home_dir*/profiles/TIPProfile/logs/server1/trace.log file.

Considerations when changing a user ID

Changing a user ID in the console is equivalent to creating new user that is assigned only the default role of `iscusers`.

You can change a user ID in the Manage Users panel accessed through **Users and Groups** > **Manage Users**. If you change a user ID then it is equivalent to creating new user and the updated user ID is only assigned the default `iscusers` role. Additional roles for the updated user ID can be configured through **Users and Groups** > **User Roles**.

Important: If you change a user ID, any roles that were mapped for it, remain associated with the previous user ID. So if you intend to change or delete a user ID, you should first remove any role mappings that are associated with it. Once you have made you change, you can re-apply the role mapping to the new user ID.

Disabling Internet Explorer Enhanced Security Configuration

Internet Explorer Enhanced Security Configuration is an option that is provided in Windows Server 2003 operating systems and above. To use *Tivoli Integrated Portal* with Internet Explorer Version 7, you must disable Internet Explorer Enhanced Security Configuration.

About this task

When Internet Explorer Enhanced Security Configuration is enabled, it can create problems in viewing charts and some portlets. Follow these steps to disable Internet Explorer Enhanced Security Configuration:

Procedure

1. Close all instances of Internet Explorer.
2. Click **Start** > **Settings** > **Control Panel** and open **Add or Remove Programs**.
3. In the left panel of the Add or Remove Programs window, click **Add/Remove Windows Components**.
4. In the Windows Components Wizard dialog that is displayed, in the **Components** panel, select the **Internet Explorer Enhanced Security Configuration** entry and click **Details**.
5. In the Internet Explorer Enhanced Security Configuration dialog that is displayed, clear the check boxes for the listed user groups and click **OK**.
6. In the Windows Components Wizard dialog, click **Next** and once your settings have been applied, click **Finish**.

Results

Internet Explorer Enhanced Security Configuration is disabled.

Resolving the `FileNotFound Exception` error on UNIX and Linux systems

When a lot of files are open in *Tivoli Integrated Portal* you may encounter a `FileNotFound Exception` error message. This problem arises only for computers running UNIX or Linux operating systems.

About this task

This is a known issue with WebSphere Application Server environments, for more details see http://www-01.ibm.com/support/docview.wss?uid=swg21067352.

In relation to a particular *Tivoli Integrated Portal* instance, carry out the following steps to resolve the issue:

Procedure

1. Open the following file in a text editor:
   - `/etc/security/limits.conf`
2. Add the following lines to `limits.conf` and save the updated file:
   `* soft nofile 32768`
   `* hard nofile 65536`
3. Restart the computer.

Results

The `FileNotFound Exception` issue is now resolved.

Appendix A. Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. These are the major accessibility features you can use with *Netcool/Impact* when accessing it on the *IBM Personal Communications* terminal emulator:

- You can operate all features using the keyboard instead of the mouse.
- You can read text through interaction with assistive technology.
- You can use system settings for font, size, and color for all user interface controls.
- You can magnify what is displayed on your screen.

For more information about viewing PDFs from Adobe, go to the following web site: http://www.adobe.com/enterprise/accessibility/main.html

Appendix B. Notices

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Glossary

This glossary includes terms and definitions for Netcool/Impact.

The following cross-references are used in this glossary:

- See refers you from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
- See also refers you to a related or contrasting term.

To view glossaries for other IBM products, go to www.ibm.com/software/ globalization/terminology (opens in new window).

A

assignment operator
    An operator that sets or resets a value to a variable. See also operator.

B

Boolean operator
    A built-in function that specifies a logical operation of AND, OR or NOT when sets of operations are evaluated. The Boolean operators are &&, || and !. See also operator.

C

command execution manager
    The service that manages remote command execution through a function in the policies.

command line manager
    The service that manages the command-line interface.

Common Object Request Broker Architecture (CORBA)
    An architecture and a specification for distributed object-oriented computing that separates client and server programs with a formal interface definition.

comparison operator
    A built-in function that is used to compare two values. The comparison operators are ==, !=, <, >, <= and >=. See also operator.

control structure
    A statement block in the policy that is executed when the terms of the control condition are satisfied.

CORBA
    See Common Object Request Broker Architecture.

D

database (DB)
    A collection of interrelated or independent data items that are stored together to serve one or more applications. See also database server.

database event listener
A service that listens for incoming messages from an SQL database data source and then triggers policies based on the incoming message data.

database event reader
An event reader that monitors an SQL database event source for new and modified events and triggers policies based on the event information. See also event reader.

database server
A software program that uses a database manager to provide database services to other software programs or computers. See also database.

data item
A unit of information to be processed.

data model
An abstract representation of the business data and metadata used in an installation. A data model contains data sources, data types, links, and event sources.

data source
A repository of data to which a federated server can connect and then retrieve data by using wrappers. A data source can contain relational databases, XML files, Excel spreadsheets, table-structured files, or other objects. In a federated system, data sources seem to be a single collective database.

data source adapter (DSA)
A component that allows the application to access data stored in an external source.

data type
An element of a data model that represents a set of data stored in a data source, for example, a table or view in a relational database.

DB   See database.

DSA   See data source adapter.

dynamic link
An element of a data model that represents a dynamic relationship between data items in data types. See also link.

E

email reader
A service that polls a Post Office Protocol (POP) mail server at intervals for incoming email and then triggers policies based on the incoming email data.

email sender
A service that sends email through an Simple Mail Transfer Protocol (SMTP) mail server.

event   An occurrence of significance to a task or system. Events can include completion or failure of an operation, a user action, or the change in state of a process.

event processor
The service responsible for managing events through event reader, event

listener and email reader services. The event processor manages the incoming event queue and is responsible for sending queued events to the policy engine for processing.

event reader
A service that monitors an event source for new, updated, and deleted events, and triggers policies based on the event data. See also database event reader, standard event reader.

event source
A data source that stores and manages events.

exception
A condition or event that cannot be handled by a normal process.

F

field   A set of one or more adjacent characters comprising a unit of data in an event or data item.

filter   A device or program that separates data, signals, or material in accordance with specified criteria. See also LDAP filter, SQL filter.

function
Any instruction or set of related instructions that performs a specific operation. See also user-defined function.

G

generic event listener
A service that listens to an external data source for incoming events and triggers policies based on the event data.

graphical user interface (GUI)
A computer interface that presents a visual metaphor of a real-world scene, often of a desktop, by combining high-resolution graphics, pointing devices, menu bars and other menus, overlapping windows, icons and the object-action relationship. See also graphical user interface server.

graphical user interface server (GUI server)
A component that serves the web-based graphical user interface to web browsers through HTTP. See also graphical user interface.

GUI   See graphical user interface.

GUI server
See graphical user interface server.

H

hibernating policy activator
A service that is responsible for waking hibernating policies.

I

instant messaging reader
A service that listens to external instant messaging servers for messages and triggers policies based on the incoming message data.

instant messaging service
  A service that sends instant messages to instant messaging clients through a Jabber server.

IPL See Netcool/Impact policy language.

J

Java Database Connectivity (JDBC)
  An industry standard for database-independent connectivity between the Java platform and a wide range of databases. The JDBC interface provides a call level interface for SQL-based and XQuery-based database access.

Java Message Service (JMS)
  An application programming interface that provides Java language functions for handling messages.

JDBC See Java Database Connectivity.

JMS See Java Message Service.

JMS data source adapter (JMS DSA)
  A data source adapter that sends and receives Java Message Service (JMS) messages.

JMS DSA
  See JMS data source adapter.

K

key expression
  An expression that specifies the value that one or more key fields in a data item must have in order to be retrieved in the IPL.

key field
  A field that uniquely identifies a data item in a data type.

L

LDAP See Lightweight Directory Access Protocol.

LDAP data source adapter (LDAP DSA)
  A data source adapter that reads directory data managed by an LDAP server. See also Lightweight Directory Access Protocol.

LDAP DSA
  See LDAP data source adapter.

LDAP filter
  An expression that is used to select data elements located at a point in an LDAP directory tree. See also filter.

Lightweight Directory Access Protocol (LDAP)
  An open protocol that uses TCP/IP to provide access to directories that support an X.500 model and that does not incur the resource requirements of the more complex X.500 Directory Access Protocol (DAP). For example, LDAP can be used to locate people, organizations, and other resources in an Internet or intranet directory. See also LDAP data source adapter.

link An element of a data model that defines a relationship between data types and data items. See also dynamic link, static link.

M

mathematic operator
A built-in function that performs a mathematic operation on two values. The mathematic operators are +, -, *, / and %. See also operator.

mediator DSA
A type of data source adaptor that allows data provided by third-party systems, devices, and applications to be accessed.

N

Netcool/Impact policy language (IPL)
A programming language used to write policies.

O

operator
A built-in function that assigns a value to a variable, performs an operation on a value, or specifies how two values are to be compared in a policy. See also assignment operator, Boolean operator, comparison operator, mathematic operator, string operator.

P

policy A set of rules and actions that are required to be performed when certain events or status conditions occur in an environment.

policy activator
A service that runs a specified policy at intervals that the user defines.

policy engine
A feature that automates the tasks that the user specifies in the policy scripting language.

policy logger
The service that writes messages to the policy log.

POP See Post Office Protocol.

Post Office Protocol (POP)
A protocol that is used for exchanging network mail and accessing mailboxes.

precision event listener
A service that listens to the application for incoming messages and triggers policies based on the message data.

S

security manager
A component that is responsible for authenticating user logins.

self-monitoring service
A service that monitors memory and other status conditions and reports them as events.

server A component that is responsible for maintaining the data model, managing services, and running policies.

service
> A runnable sub-component that the user controls from within the graphical user interface (GUI).

Simple Mail Transfer Protocol (SMTP)
> An Internet application protocol for transferring mail among users of the Internet.

Simple Network Management Protocol (SNMP)
> A set of protocols for monitoring systems and devices in complex networks. Information about managed devices is defined and stored in a Management Information Base (MIB). See also SNMP data source adapter.

SMTP See Simple Mail Transfer Protocol.

SNMP
> See Simple Network Management Protocol.

SNMP data source adapter (SNMP DSA)
> A data source adapter that allows management information stored by SNMP agents to be set and retrieved. It also allows SNMP traps and notifications to be sent to SNMP managers. See also Simple Network Management Protocol.

SNMP DSA
> See SNMP data source adapter.

socket DSA
> A data source adaptor that allows information to be exchanged with external applications using a socket server as the brokering agent.

SQL database DSA
> A data source adaptor that retrieves information from relational databases and other data sources that provide a public interface through Java Database Connectivity (JDBC). SQL database DSAs also add, modify and delete information stored in these data sources.

SQL filter
> An expression that is used to select rows in a database table. The syntax for the filter is similar to the contents of an SQL WHERE clause. See also filter.

standard event reader
> A service that monitors a database for new, updated, and deleted events and triggers policies based on the event data. See also event reader.

static link
> An element of a data model that defines a static relationship between data items in internal data types. See also link.

string concatenation
> In REXX, an operation that joins two characters or strings in the order specified, forming one string whose length is equal to the sum of the lengths of the two characters or strings.

string operator
> A built-in function that performs an operation on two strings. See also operator.

U

user-defined function
A custom function that can be used to organize code in a policy. See also function.

V

variable
A representation of a changeable value.

W

web services DSA
A data source adapter that exchanges information with external applications that provide a web services application programming interface (API).

X

XML data source adapter
A data source adapter that reads XML data from strings and files, and reads XML data from web servers over HTTP.

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